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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,385	09/18/2001	Tracy D. Mallory	47283/RJP/E264	1550
23363	7590	03/27/2006	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			HYUN, SOON D	
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PASADENA, CA 91109-7068			ART UNIT	PAPER NUMBER

2616

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,385

Applicant(s)

MALLORY, TRACY D.

Examiner

Soon D. Hyun

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 25-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 25-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/22/2002.

ANDREW C. LEE
PRIMARY PATENT EX^A

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 25-58 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,335,933.

Although the conflicting claims are not identical, they are not patentably distinct from each other because;

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. *In re Longi*, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); *In re Berg*, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of

obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Moreover, omission of a reference element whose is not needed would be obvious to one of ordinary skill in the art. It is well settled that the omission of an element and its functions is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 163 USPQ 184 (CCPA 1963). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969).

Claims 1, 2 or 3 of Patent No. 6,335,933 encompass the limitations of claims 1, 25, 26, 35, 37, 40, 42-45, 49, 53, 54, 56, 57 of the instant application.

3. Claims 27, 28, 32, 34, 36, 41, 46, 50, 52, and 58 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,335,933 in view of Halsall (a reference in the IDS filed on 1/22/2002).

Regarding claim 27, claim 1 of the Patent contains every element except a step of sending a reminder frame from the sender to the receiver as recited in the claim. Halsall discloses a step of sending a reminder frame from the sender to the receiver as recited in the claim. (FIG. 4.14). Those of skill in the art would have been motivated by Halsall to implement a continuous ARQ protocol. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a step of sending a reminder frame from the sender to the receiver.

Regarding claims 28, and 46, claim 1 of the Patent contains every element except that each nack frame contains data when the receiver has data to send from the receiver to the sender. Halsall discloses that the receiver transmits data with the nack indication. See FIG. 4.19. Those of skill in the art would have been motivated by Halsall to send nack indication with data to be transmitted to the sender to increase link utilization. Therefore, it would have been obvious to one having ordinary skill in the art to send nack indication with data to be transmitted.

Regarding claims 34, 41, 52, and 58, claim 1 of the Patent contains every element except the frame identifiers are a set of sequential integers and the frame identifiers used in sequence. Halsall teaches that the identifiers are a set number of binary digits and the numbers are used in sequence and re-useable (page 211 and FIG. 4.17). Therefore, it would have been obvious to one having ordinary skill in the art to use a set of numbers (integers) for the identifiers to for providing a smaller modulo.

Regarding claim 36, claim 1 of the Patent contains every element except that a frame is received out of order, buffering the out order of frame in a receiver buffer for a receiver buffer period until preceding frames are received. Halsall discloses that a frame a frame is received out of order, buffering the out of frame in a receiver buffer for a receiver buffer period (page 191, lines 1-2). Those of skill in the art would have been motivated by Halsall to retain the out of order frame until preceding frames are received to process all frames in sequence without missing any frame. Therefore, it would have been obvious to one having ordinary skill in the art to retain the out order of frame in a receiver buffer for a receiver buffer period until preceding frames are received.

Regarding claims 41 and 58, claim 1 of the Patent contains every element except that the frame identifiers are re-useable frame identifiers. Halsall teaches that the identifiers are set number of binary digits and the numbers are re-useable (page 211 and FIG. 4.17). Therefore, it would have been obvious to one having ordinary skill in the art to use a set of numbers for the identifiers to for providing a smaller modulo.

4. Claim 29 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,335,933 in view of Tomick et al (U.S. Patent No. 6,567,388).

Claim 1 of the Patent contains every element except a step of sending only one re-transmitted frame for multiple nacks for a frame. Tomick et al (Tomick) teaches that multiple nacks for a missed frame and n copies of the missed frame are re-transmitted (col. 6, lines 31-45). It will be apparent to those of skill in the art to re-transmit only one frame for the multiple nacks to increase link utilization.

Therefore, it would have been obvious to one having ordinary skill in the art to send only one re-transmitted frame for multiple nacks for a missed frame.

5. Claims 30, 31, 33, 47, 48, and 51 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,335,933 in view of Marturano et al (U.S. Patent No. 6,636,230).

Claim 1 of the Patent contains every element except that the sender transmits the frame to more than one receiver. Marturano et al (Marturano) teaches an Automatic Repeat Request (ARQ) protocol, wherein data message are transmitted (broadcasted) from one sender to a plurality of receivers ((col. 2, lines 58-63). Those of skill in the art

would have been motivated by Marturano to incorporate an element of the broadcast communication into the claim 1 of the Patent No. 6,355,933 to transmit data to a plurality of receivers. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the method for the plurality of receivers.

It is **Official Notice** that a frame having a source address and a destination address is known in the art.

6. Claims 38 and 55 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,335,933 in view of Chan (U.S. Patent No. 5,790,551).

Claim 1 of the Patent contains every element except the steps of assigning a priority to each frame and handling frames of differing priorities with differing logical channels. Chan teaches priorities in frames for an ARQ scheme to increase efficiency of a channel (col. 2, lines 20-28). Therefore it would have been obvious to one having ordinary skill in the art incorporate a packet prioritizing into claim 1 of the patent to increase efficiency of a channel.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 25, 27, 28, 32, 34, 36, 37, 39-44, 46, 49, 50, 52, 54, and 56-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Halsall (a reference in the IDS filed on 1/22/2002).

Regarding claims 1, 25, 32, 39, 44, 50, and 56, Halsall discloses a method of error control with a continuous repeat request for a data communication network in explicit retransmission scheme (page 191-207 and FIG. 4.12). In the scheme, a primary, P (a sender) transmit a sequence of I-frames, wherein each I-frame is identified with a frame number N, N+1, N+2, N+3, ... (frame identifiers), continuously to a secondary, S (a receiver) without waiting for an acknowledgement (ACK) or a negative acknowledgement (NACK) to be returned and P retains a copy of each I-frame transmitted in a retransmission list in a FIFO. When receiving the frame N+2 out of sequence, i.e., detecting from the identifier N+2 that a prior frame N+1 is missing, the secondary returns a specific NACK for the frame that is missing to the primary. When receiving the NACK, the primary retransmits the I-frame N+1 from the transmission list.

Halsall further discloses that the sender releases (re-transmitted) the retained copy of the transmitted frame when an ACK is not received within a predetermined time (a storage constraint is reached). See page 197, lines 2-8.

Regarding claim 27, Halsall discloses a step of sending a reminder frame from the sender to the receiver as recited in the claim. (FIG. 4.14).

Regarding claims 28 and 46, Halsall further discloses that the secondary transmits data with the NACK, if necessary (FIG. 4.19).

Regarding claims 34 and 52, Halsall further teaches that the identifiers are set number of binary digits (integers) and the frame identifiers are used in sequence and transmitted in sequential order (page 192, FIG. 4.12).

Regarding claim 36, Halsall further discloses a buffer in the secondary for buffering the out of sequence frame until the preceding frame is received. (FIG. 4.12)

Regarding claims 37 and 54, Halsall further discloses that a duplex link is required for the ARQ (page 189, lines 2-3).

Regarding claims 40, 49, and 57, Halsall further discloses ARQ with Go-back-N, wherein a NACK indicates a first missed frame and a number of sequential missed frames (frames to be re-transmitted) following the first missed frame.

Regarding claims 41 and 58, Halsall further teaches that the identifiers are set number of binary digits and the numbers are re-useable (page 211 and FIG. 4.17).

Regarding claims 42 and 43, Halsall further discloses that sender stores contents of each I-frame for a buffer period (a period until receipt of an ACK for each I-frame, see page 197 line 3- 9 and FIG. 4.15) with an additional timeout mechanism and the sender provides a separate timer for each frame (the buffer period is tracked).

Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Halsall in view of Tomick (U.S. Patent No. 6,567,388).

Halsall differs from the present invention in that Halsall returns the NACK once at each missing frame while the present application sends multiple NACKs. Tomick transmits multiple NACKs to increase the probability of successfully receiving a frame (col. 6, lines 31-39). Therefore, it would have been obvious to one having ordinary skill in the art to incorporate multiple NACKs of Tomick into Halsall to increase the probability of successfully receiving a frame. Tomick et al (Tomick) teaches that multiple nacks for a missed frame and n copies of the missed frame are re-transmitted (col. 6, lines 31-45). It will be apparent to those of skill in the art to re-transmit only one frame for the multiple NACKs to increase link utilization by sending only one frame.

Therefore, it would have been obvious to one having ordinary skill in the art to incorporate multiple NACKs for a missed frame and sending only one re-transmitted frame for into Halsall.

Claims 26, 35, 45, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halsall.

it is an **Official Notice** that a frame identifier (a source address and a destination address) is known in the art, thus that the NACK frame has the identifier. Halsall further discloses that each NACK has a sequence number for the missed frame, i.e., the sequence number in the NACK indicates that a missing frame count is one and together identifies a sequence of one frame that includes the missed frame.

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11. Claims 30, 31, 33, 47, 48 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halsall in view of Marturano et al (U.S. Patent No. 6,636,230).

Regarding claims 30, 31, 47, and 48, it is an **Official Notice** that a frame having an identifier indicating a source address and a destination address) is known in the art.

Regarding claims 33 and 51, Halsall does not explicitly teach that the sender transmits the frame to more than one receiver. Marturano et al (Marturano) teaches an Automatic Repeat Request (ARQ) protocol, wherein data message are transmitted (broadcasted) from one sender to a plurality of receivers ((col. 2, lines 58-63). Those of skill in the art would have been motivated by Marturano to incorporate an element of the broadcast communication into the claim 1 of the Patent No. 6,355,933 to transmit data to a plurality of receivers. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the method for the plurality of receivers.

12. Claim 38 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Halsall in view of Chan (U.S. Patent No. 5,790,551).

Halsall does not explicitly teach to assign a priority to each frame. Chan teaches priorities in frames for an ARQ scheme to increase efficiency of a channel (col. 2, lines 20-28). Therefore it would have been obvious to one having ordinary skill in the art incorporate a packet prioritizing into claim 1 of the patent to increase efficiency of a channel.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon D. Hyun whose telephone number is 571-272-3121. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


S. Hyun
03/17/2006

ANDREW C. LEE
PRIMARY PATENT EXAMINER

